



HQ IMCOM

Energy & Utilities Program Update

presented at
3rd Annual Energy Workshop
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Paul M. Volkman, C.E.M.
Energy and Utilities Program Manager
HQ Installation Management Command

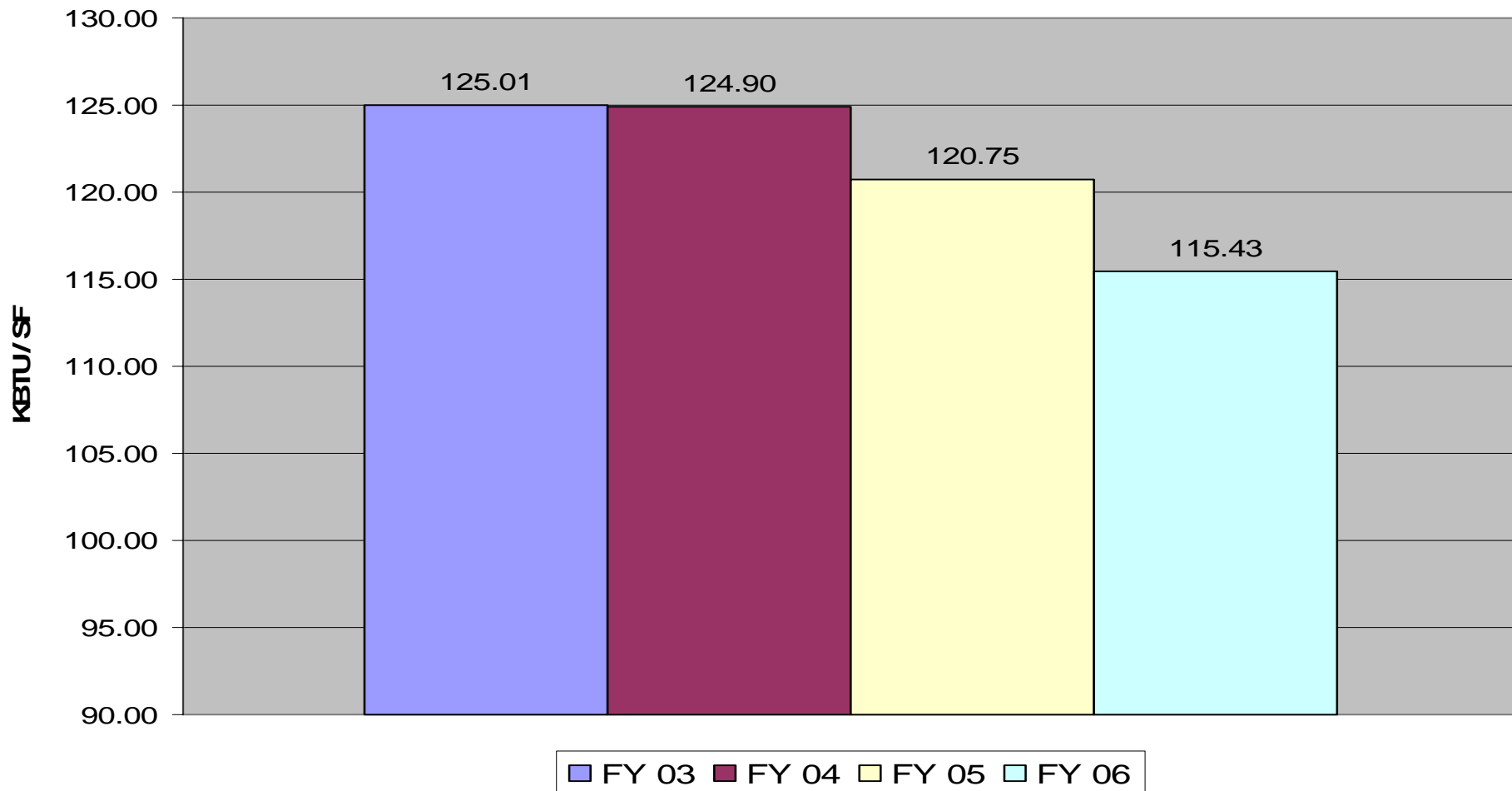


Program Topics

- IMCOM Energy Usage
- Energy Assessments (EACA, E4, EEAP)
- Natural Gas Initiatives
- Electric Tariff Rate Surveys
- Resource Efficiency Managers (REMs)
- Utilities Modernization Program
- Metering Program
- Garrison Commander's Guidance
- Training/Conferences

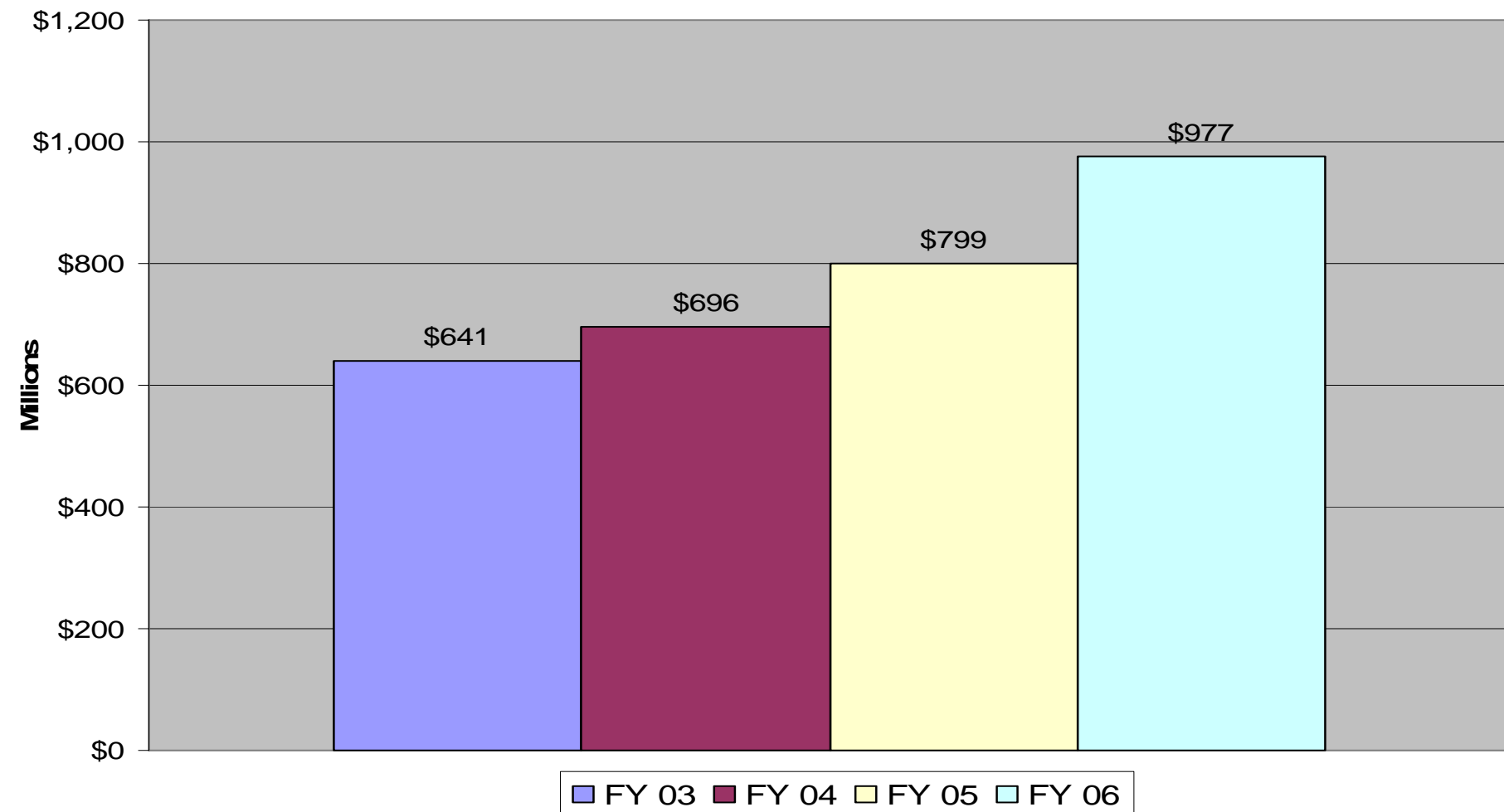


IMCOM ENERGY USAGE FY03-FY06 (RCI ADJUSTED)





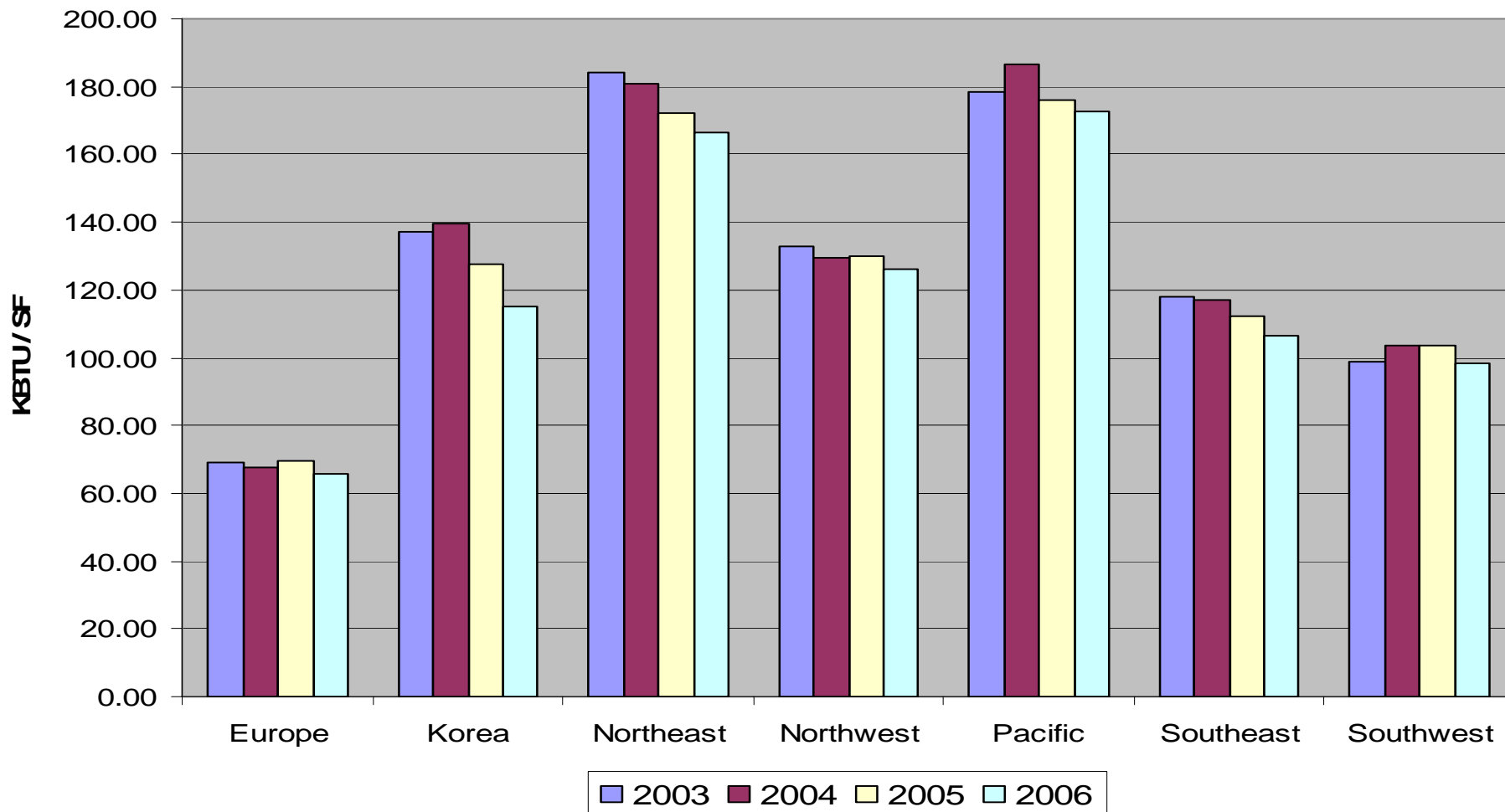
IMCOM ENERGY COSTS FY03-FY06 (RCI ADJUSTED)





IMCOM ENERGY USAGE BY REGION

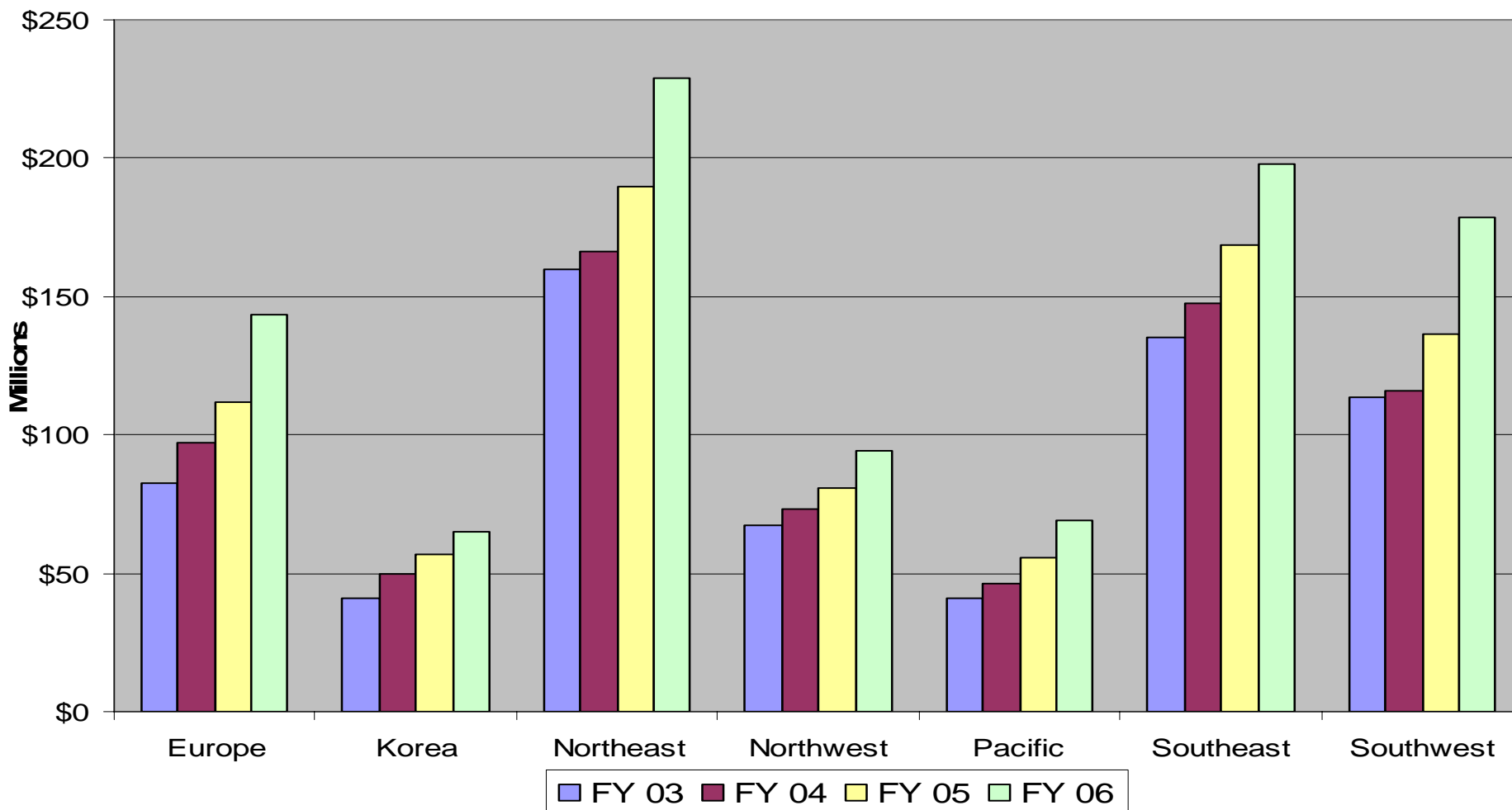
FY03-FY06 (RCI ADJUSTED)





IMCOM ENERGY COSTS BY REGION

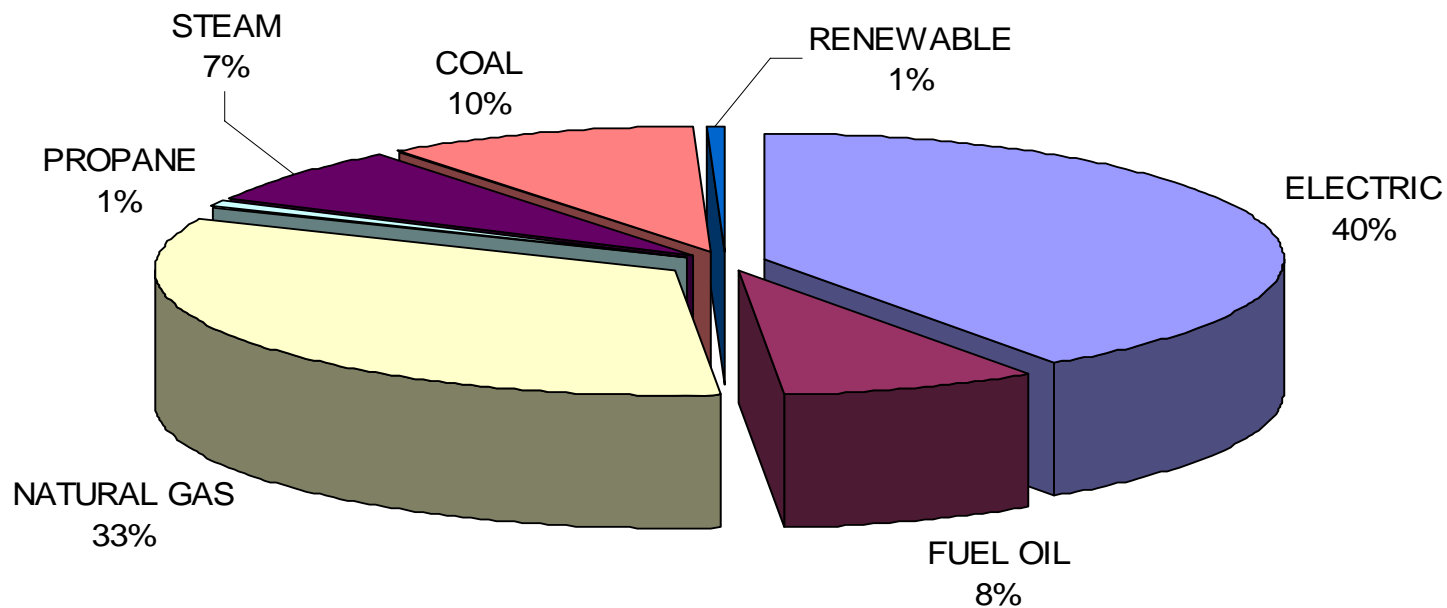
FY03-FY06 (RCI ADJUSTED)





IMCOM ENERGY USAGE BY TYPE

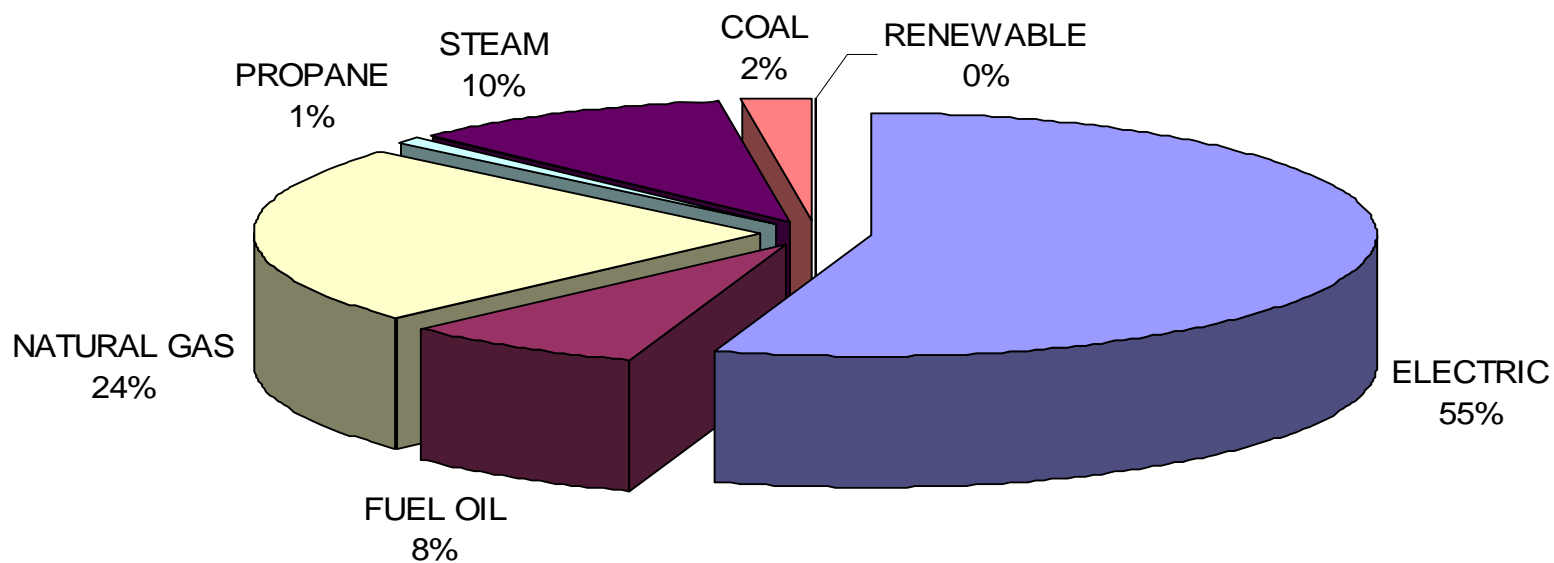
FY06 TOTAL USAGE = 64,536 Bbtus





IMCOM ENERGY COST BY TYPE

FY06 TOTAL COST = \$977 Million





Energy Assessments

- **Energy Awareness and Conservation Assessment (EACA):**
 - Focus on low cost/no cost energy saving opportunities
 - Average 10~12 sites per year
 - Finalizing list of FY07 candidate sites
- **Energy Efficiency Expert Evaluation (E4):**
 - Focus on low cost/no cost short payback methods to improve energy efficiency through improved operations and maintenance techniques
 - Provides O&M Action Plan that includes follow-up visits and facilitation as needed to ensure that opportunities are turned into real savings
 - IMCOM responded to ACSIM data call by nominating 21 sites



Energy Assessments

- **Energy Engineering Analysis Program (EEAP):**
 - More detailed than EACA; utilizes computer modeling and testing
 - Help DPWs define scope of work, prepare DD1391s, LCC analyses
 - Recommend “best fit” acquisition strategies SRM, ECIP, and 3rd party financing such as ESPCs, UESCs, and EULs
 - Evaluate feasibility for implementing renewable energy projects
- **Status:**
 - FY06 assessments have been completed at Rock Island and Polk
 - FY07 assessments will be conducted at Aberdeen, Drum, Belvoir, West Point, Lewis, Bliss, and Rucker
- **Approach:** Team comprised of Huntsville, CERL, PNNL, Contractors, HQ IMCOM, Regions, Garrisons & others as needed



Natural Gas Risk Management Program

- Objective of the program is to:
 - Minimize the impact of rising natural gas prices on installation operating budgets
 - Reduce the need to use non-energy program funds to cover any shortfall
- The Natural Gas Risk Management Program complements the Defense Energy Support Center (DESC) Natural Gas Procurement Program



Natural Gas Risk Management Program

- **Integrated Process Includes the Following Steps:**

- Collect and analyze historical load and forecast data to understand consumption requirements
- Analyze load data to determine relationship between historical consumption and forecasted requirements
- Evaluate key market price drivers which include inventory levels of natural gas storage, changing weather patterns, crude oil-natural gas price correlation, financial speculator activity, geopolitical turmoil and civil unrest
- Develop budgets and monthly program price targets to support strategy decisions
- Create customized risk management strategies based on load analysis, market assessment, and coordination with installations
- Implement strategies through lock-in recommendation process

Integrated Risk Management Process





Other Natural Gas Initiatives

- **Energy Manager's Guide to Natural Gas**
 - Guide to assist installation personnel who are responsible for managing the base's natural gas requirements
 - Includes establishing customer demand, procurement of supply, contracting, budgeting, and invoicing
- **Landfill Gas Supply Study**
 - Evaluate opportunities to procure renewable sources of supply from landfill gas sources near CONUS bases
 - Determine which installations have access to landfill gas supply
 - Recommend potential opportunities for landfill gas with installations that would have the greatest impact

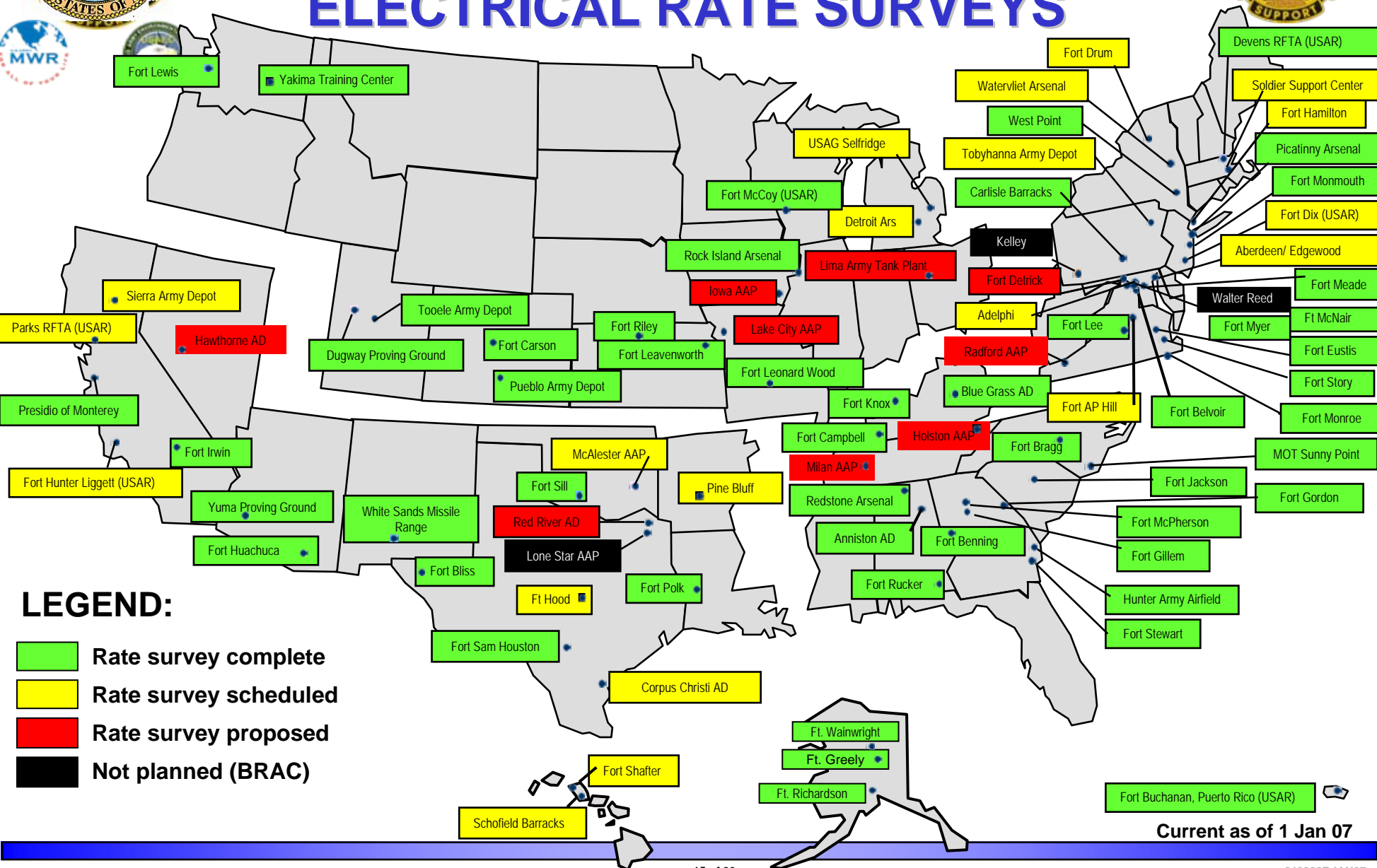


Electric Tariff Rate Surveys

- 49 utility systems surveyed to date; 29 more planned for FY07-08
- Completed surveys identified \$13.1 million in savings
 - West Point - \$3.5M by switching to different tariff rate
 - Fort Irwin - \$2.4M by increasing voltage take
- Recommendations to reduce consumption and save on utility costs
 - eliminate payment of inappropriate taxes
 - switching to more beneficial tariff rate
 - implement peak shaving - stand-by generation
 - upgrade/install energy management control systems
 - seek competitive solicitation where allowed
 - enhance or add capacitance
 - avoid or eliminate late fees



ELECTRICAL RATE SURVEYS



Current as of 1 Jan 07



Resource Efficiency Managers (REMs)

- **Program Concept:**

- Full-time person that supports energy manager
- Dedicated expert w/tech support
- Sole focus is energy/utility cost savings
- Typical annual contract w/optional renewals
- HQ IMCOM will pay 1st year start-up costs
- Must obtain actual savings greater than contract cost (pays for itself!)
- Has strong incentive to achieve results
- Army risk is extremely low

- **Status:**

- Currently at 10 garrisons: Sill, Polk, Bragg, Campbell, Hawaii, Sunny Point, Picatinny, Bliss, Sam Houston & Wainwright
- SWRO has region-wide BPA in place to hire REMs
- HQ IMCOM implementing CONUS-wide BPA contract w/ Huntsville
- Huntsville benchmarking REM program



Metering Program

- EPACT 2005 requires installation of advanced electrical meters by 2012, where practicable
- Advanced meters that provide data at least daily, measure at least hourly, and report remotely
- Metering Implementation Plan issued 6 Sep 06 based on metering all buildings >29KSF
- ACSIM currently forming metering committee
- Upcoming data call to the field for current meter status
- Implementation to begin in FY08 and is planned to also include natural gas and water meters.



FY08 Proposed Metering Plan

Bliss	Aberdeen	Hood
West Point	Bragg	Polk
Irwin	Benning	Drum
Campbell	Redstone	Stewart
White Sands	Huachuca	Belvoir
Rucker	Jackson	Picatinny
Meade	Carson	Lee
Riley		



Utilities Modernization Program

- Funds programmed in FY08-13 POM
- Program covers plants and distribution systems
- Only systems exempted from privatization are eligible
- ISR is the program's yardstick to measure progress
- Objective is to raise component status to Q-1 level and save energy and dollars in the process
- Project data call to go out soon



Utilities Modernization Program

Condition Assessment – NERO (as of 3rd Quarter, FY06)

Utility	Facility Category Group	Description	Northeast													
			ABERDEEN PROVING GROUND	ADELPHI LABORATORY CTR	CARLISLE BARRACKS	FORT BELVOIR	FORT DIX	FORT DRUM	FORT EUSTIS	FORT HAMILTON	FORT LEE	FORT MCNAIR	FORT MEADE	FORT MYER	PICATINNY ARSENAL	WEST POINT MIL RESERVATION
			Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual
Electrical	Electric Source															
	81100	Electric Power Source	N/A	N/A	N/A	N/A	N/A	N/A	Q-1	N/A	N/A	N/A	N/A	N/A	Q-1	N/A
	81150	Standby Power	Q-1	Q-1	Q-1	Q-1	Q-1	Q-1	Q-2	N/A	N/A	N/A	Q-4	Q-1	N/A	Q-1
	Electric Distribution															
	81200	Electric Power Lines	Q-3	Q-1	Q-1	Q-4	Q-1	Q-1	N/A	Q-1	N/A	N/A	Q-1	Q-1	N/A	Q-1
	81230	Exterior Lighting	Q-1	Q-1	Q-1	Q-4	Q-1	Q-3	N/A	Q-1	N/A	Q-1	N/A	Q-2	N/A	Q-1
	81242	Underground Electric Lines	Q-3	Q-1	Q-1	Q-1	Q-1	Q-1	N/A	Q-1	N/A	Q-1	Q-1	Q-1	N/A	Q-1
	Electric Substations															
	81300	Power Substation/Switch Facilities	Q-1	Q-1	Q-1	Q-1	N/A	Q-2	N/A	Q-2	N/A	N/A	Q-1	N/A	N/A	Q-1
	81350	Electric SW Stat	Q-3	N/A	Q-1	Q-1	N/A	Q-4	N/A	N/A	N/A	Q-1	Q-4	Q-1	Q-1	Q-1
	81360	Transformer	Q-1	Q-1	Q-1	Q-1	Q-1	Q-2	N/A	Q-2	N/A	Q-1	Q-1	Q-1	N/A	Q-1
Natural Gas	Gas Distribution															
	82400	Gas Transmission Lines	Q-1	Q-1	Q-1	N/A	N/A	Q-1	Q-1	Q-1	Q-1	N/A	Q-1	N/A	N/A	Q-1



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			Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual
Water	Water Source/Treatment															
	84110	Water Treatment Facilities	Q-3	N/A	Q-1	N/A	Q-2	Q-1	N/A	N/A	N/A	N/A	Q-3	N/A	Q-1	Q-4
	84125	Filter Plant Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	84130	Water Source-Potable	Q-4	Q-1	N/A	Q-1	Q-1	Q-2	N/A	N/A	N/A	N/A	N/A	N/A	Q-1	Q-1
	84150	Chlorinator Facilities	N/A	N/A	N/A	Q-3	N/A	Q-3	N/A	N/A	N/A	N/A	N/A	N/A	Q-1	Q-1
	84410	Water Source-Nonpotable	N/A	N/A	N/A	Q-4	Q-1	Q-1	N/A	N/A	N/A	N/A	Q-2	N/A	Q-4	N/A
	84450	Chlorinator Facilities-Nonpotable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Water Distribution															
	84200	Water Distribution Lines-Potable	Q-3	Q-1	Q-1	Q-4	Q-2	Q-1	N/A	Q-1	N/A	Q-1	Q-4	Q-4	Q-1	Q-3
	84300	Fire Protection System Lines-Nonpotable	Q-1	Q-1	Q-1	Q-2	N/A	Q-1	N/A	Q-1	N/A	N/A	N/A	Q-1	Q-2	Q-2
	84500	Water Distribution Lines-Nonpotable	Q-3	Q-1	N/A	Q-1	Q-2	Q-1	Q-2	N/A	N/A	N/A	N/A	N/A	Q-2	N/A
	Water Storage															
	84600	Water Storage-Potable	Q-3	N/A	Q-1	Q-2	Q-1	Q-2	N/A	N/A	N/A	N/A	Q-3	Q-1	Q-3	Q-3
	84620	Reservoir-Potable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q-1	N/A
	84700	Water Storage-Nonpotable	N/A	N/A	N/A	N/A	N/A	Q-1	Q-1	N/A	N/A	N/A	N/A	N/A	Q-3	Q-1
	84720	Reservoir-Nonpotable	Q-4	Q-1	N/A	N/A	Q-1	Q-3	N/A	N/A	Q-1	N/A	N/A	N/A	N/A	Q-1
	84730	Fire Protection Ponds	N/A	Q-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	84740	Water Retaining Basins	Q-1	N/A	Q-1	Q-1	Q-1	Q-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q-1



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			Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual	Qual
Wastewater	Wastewater Treatment and Disposal															
	83110	Primary Wastewater Treatment	N/A	N/A	N/A	N/A	Q-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q-2	Q-4
	83112	Secondary Wastewater Treatment	Q-1	N/A	N/A	N/A	Q-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	83113	Advanced Wastewater Treatment	Q-1	N/A	N/A	N/A	Q-1	N/A	N/A	N/A	N/A	N/A	Q-2	N/A	N/A	N/A
	83140	Industrial Wastewater Treatment	Q-2	Q-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q-4	N/A
	Wastewater Collection															
	83200	Sewage/Waste Collection Lines	Q-3	Q-1	Q-3	Q-4	Q-1	Q-3	Q-1	Q-2	N/A	Q-1	Q-1	Q-4	Q-1	Q-3
Heating/Cooling	Heat/Air-Conditioning Source															
	82100	Heat Source	Q-1	Q-1	N/A	Q-1	Q-3	N/A	Q-1	Q-1	N/A	N/A	Q-1	Q-1	Q-4	Q-1
	82600	Refrigeration and AC Facilities	Q-1	Q-1	N/A	Q-1	N/A	N/A	Q-1	N/A	N/A	N/A	Q-3	N/A	Q-1	Q-1
	Heat/Air-Conditioning Distribution															
	82200	Heat Distribution Lines	Q-3	Q-3	N/A	Q-3	Q-1	N/A	Q-4	N/A	Q-3	Q-4	Q-4	Q-4	Q-1	Q-3
	82710	Chilled Water Lines	Q-4	Q-3	Q-1	Q-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q-4	Q-1	N/A



FY07 Garrison Commander's Guidance

- Issued on 5 Dec 06 -- “Living document”
- “It’s intent is to mandate and illuminate standing policies, programs, and best practices. It gives a Garrison Commander a tool by which to check on and measure progress in the myriad of tasks required to run and command a garrison.”
- Major points for an energy manager:
 - Establish at least one full-time energy manager position at each garrison
 - Program funding to send energy managers to CEM course, Energy 2007, and Army Energy Forum
 - Identify and pursue at least one ESPC project for FY07
 - Identify and initiate at least one UESC project for FY07



Training/Conferences

- National Facilities Management & Technology (20-22 Mar)
- Certified Energy Manager (Tentatively 11~15 Jun)
- Energy 2007 (6~8 Aug) & Army Energy Forum (9~10 Aug)
- University Programs
 - University of Maryland:
<http://www.umuc.edu/grad/msm/tracks/erm.shtml>
 - New Mexico State: <http://cpu.nmsu.edu/>
 - University of North Carolina:
<http://continuingeducation.ncsu.edu/>
 - University of Wisconsin: <http://www.engr.wisc.edu/epd/>
- FEMP:
 - http://www1.eere.energy.gov/education/adult_education.html
 - <http://fempcentral.com/workshops/registration.ws>
- ASHRAE: <http://www.ashrae.org/>
- AEE: <http://www.aeecenter.org/>





INSTALLATION MANAGEMENT COMMAND



“Sustain, Support and Defend”